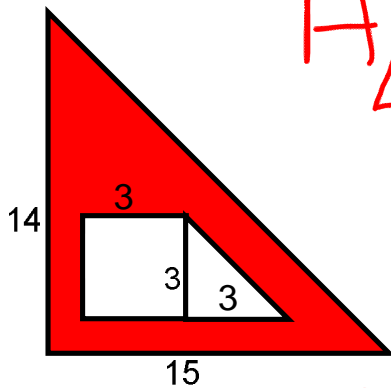


04/03/14 Agenda:

- Review Homework
 - Worksheet 3 - Area of Rhombi & Kites
- Section 11.2 day 2 - Area of Trapezoids
- Homework
 - Worksheet 4 - Area of Trapezoids

Warm Up - Get Your Homework Out!

Find the area of the shaded section:



$$A_{\Delta} = \frac{1}{2} \cdot 3 \cdot 3 = 4.5$$

$$A_{\square} = 3 \cdot 3 = 9$$

$$A_{\Delta} - A_{\square} - A_{\Delta}$$

$$A_{\text{Big } \Delta} = \frac{1}{2} \cdot 14 \cdot 15 = 105 \text{ u}^2$$

$$\begin{array}{r} 87 \\ 91.5 \end{array}$$

$$\begin{array}{r} 105 \\ - 9 \\ \hline 96.0 \\ - 4.5 \\ \hline 91.5 \end{array}$$

$$A = 91.5 \text{ u}^2$$

Section 11.2 day 2 - Area of Trapezoids

Target 11G

April 3, 2014

Review/Summary:

Perimeter: The total distance around an object.

Area: The total number of square units inside an object.

$$A_{\text{Square}} = s^2 \text{ or } b \cdot h$$

$$A_{\text{Triangle}} = \frac{1}{2} \cdot b \cdot h$$

$$A_{\text{Parallelogram}} = b \cdot h$$

$$A_{\text{Equilateral Triangle}} = \frac{s^2 \sqrt{3}}{4}$$

$$A_{\text{Rectangle}} = b \cdot h$$

$$A_{\text{Kite}} = \frac{1}{2} \cdot d_1 \cdot d_2$$



$$A_{\text{Rhombus}} = \frac{1}{2} \cdot d_1 \cdot d_2 \text{ or } b \cdot h$$

Section 11.2 day 2 - Area of Trapezoids

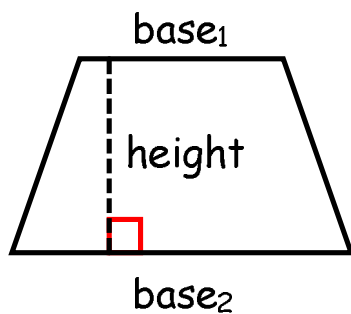
Target 11G

April 3, 2014

Goal: Find the Area of Trapezoids.

Trapezoids: One set of opposite sides parallel, the other two sides not parallel.

The parallel sides are called bases, we refer to them as b_1 and b_2 . The height of the trapezoid is the distance between the bases.

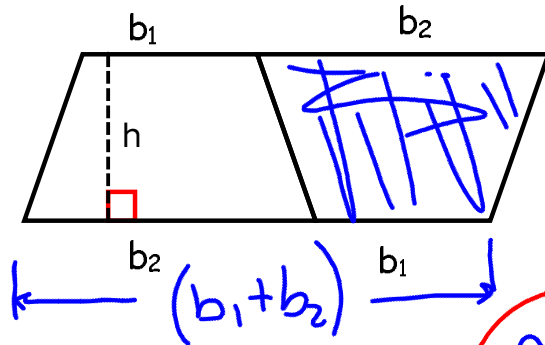


Section 11.2 day 2 - Area of Trapezoids

Target 11G

April 3, 2014

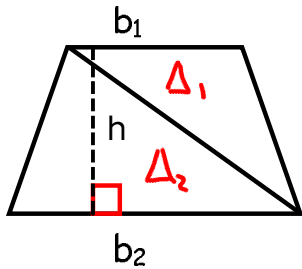
Trapezoids: There are two ways to find the area.



$$A_{\square} = b \cdot h$$

$$= (b_1 + b_2)h$$

$$A_{\square} = \frac{1}{2} h (b_1 + b_2)$$



$$A_{\square} = A_{\Delta_1} + A_{\Delta_2}$$

$$A_{\Delta_1} = \frac{1}{2} b_1 h$$

$$A_{\Delta_2} = \frac{1}{2} b_2 h$$

$$A_{\square} = \left(\frac{1}{2} b_1 h \right) + \left(\frac{1}{2} b_2 h \right)$$

$$= \frac{1}{2} h (b_1 + b_2)$$

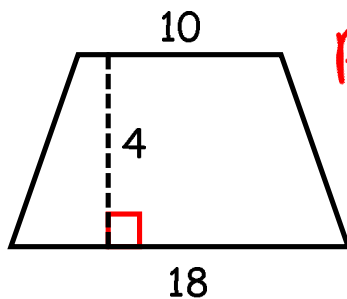
Whichever way you prefer, $A_{\text{Trapezoid}} = \frac{1}{2} \cdot h \cdot (b_1 + b_2)$

Section 11.2 day 2 - Area of Trapezoids

Target 11G

April 3, 2014

Find the areas.



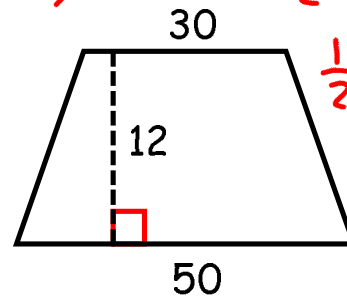
$$A_{\Delta} = \frac{1}{2}h(b_1 + b_2)$$

$$A = \frac{1}{2} \cdot 4(10 + 18)$$

$$= \frac{1}{2} \cdot 4 \cdot 28$$

$$= 560^2$$

Area: 560²

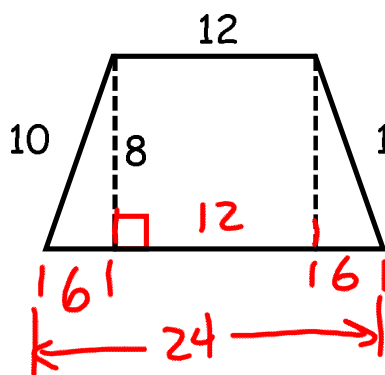


$$\frac{1}{2} \cdot 12(30 + 50)$$

$$\frac{1}{2} \cdot 12 \cdot 80$$

$$= 4800^2$$

Area: 4800²



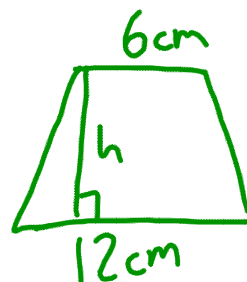
$$\frac{1}{2} \cdot 8(12 + 24)$$

$$\frac{1}{2} \cdot 8 \cdot 36$$

$$= 1440^2$$

Area: 1440²

The area of a trapezoid is 72cm². If b₁ is 6cm and b₂ is 12cm, what is the height?



$$A = 72\text{cm}^2$$

Height: 8cm

$$A = \frac{1}{2}h(b_1 + b_2)$$

$$72 = \frac{1}{2}(6 + 12)h$$

$$72 = \frac{1}{2} \cdot 18 \cdot h$$

$$72 = 9h$$

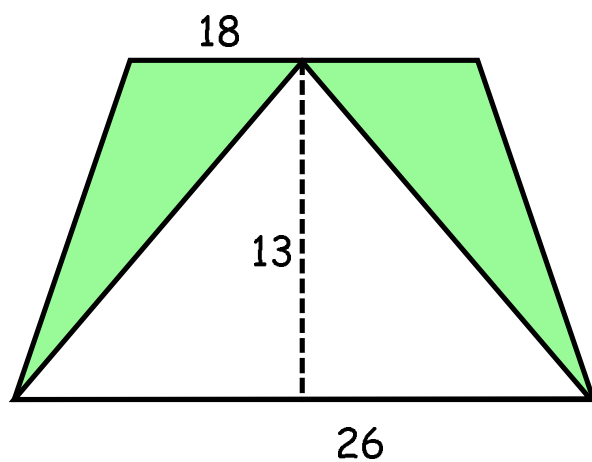
$$8\text{cm} = h$$

Section 11.2 day 2 - Area of Trapezoids

Target 11G

April 3, 2014

Find the area of the shaded region:



$$A_{\Delta} = \frac{1}{2} 13 \cdot 26$$

$$= 169 \text{ u}^2$$

Area: $\underline{1170^2}$

$$\begin{array}{r} 286 \\ -169 \\ \hline 117 \end{array}$$

$$A_{\square} - A_{\Delta}$$

$$A_{\square} = \frac{1}{2} 13(18+26)$$

$$286 \text{ u}^2$$